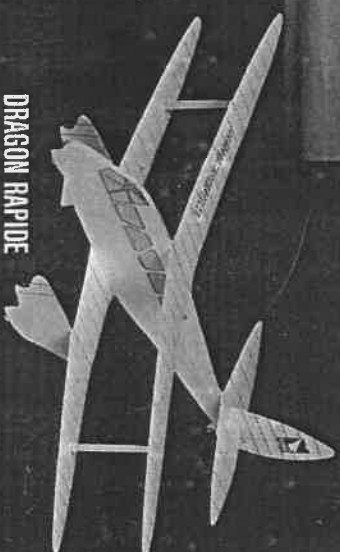
White wings®

LIMITED EDITION
15 SELECT MODELS

EXCELLENT
15 PAPER AIRPLANES

HISTORY OF PASSENGER PLANE SERIES

DESIGNED BY
DR. Y. NINOMIYA

DRAGON RAPIDE

Assembly Kit

Dr. Yasuaki Ninomiya was awarded the Grand Prize in both the flight time and distance divisions at the First International Paper Airplane Contest (Pacific Basin Division) in San Francisco in 1967 and served as a judge in the Second Great International Paper Airplane Contest in Seattle in 1985.

White wings®

EXCELLENT PAPER AIRPLANES

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1. Racer 538 Wren
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4. Simple Plane 1
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6. Junkers F-13
7. Ford 5AT TRIMOTOR
8. De Havilland D.H.89 DRAGON RAPIDE
9. Douglas DC-3
10. Martin M-130 CHINA CLIPPER
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  and design directions

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  Rubber band
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(GLUE NOT INCLUDED)

■ **Kit includes the following gliders:**

FLYING FUN FOR EVERYONE

When you fly your plane please keep the following in mind.

***Launch your plane in a large area away from people who might get hit.**

***Don't fly your plane where cars will be passing by.**

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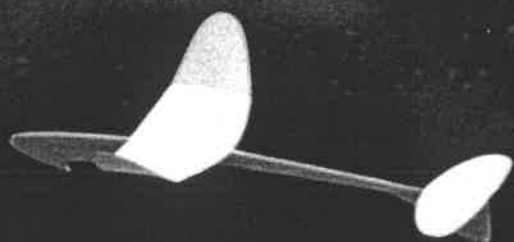
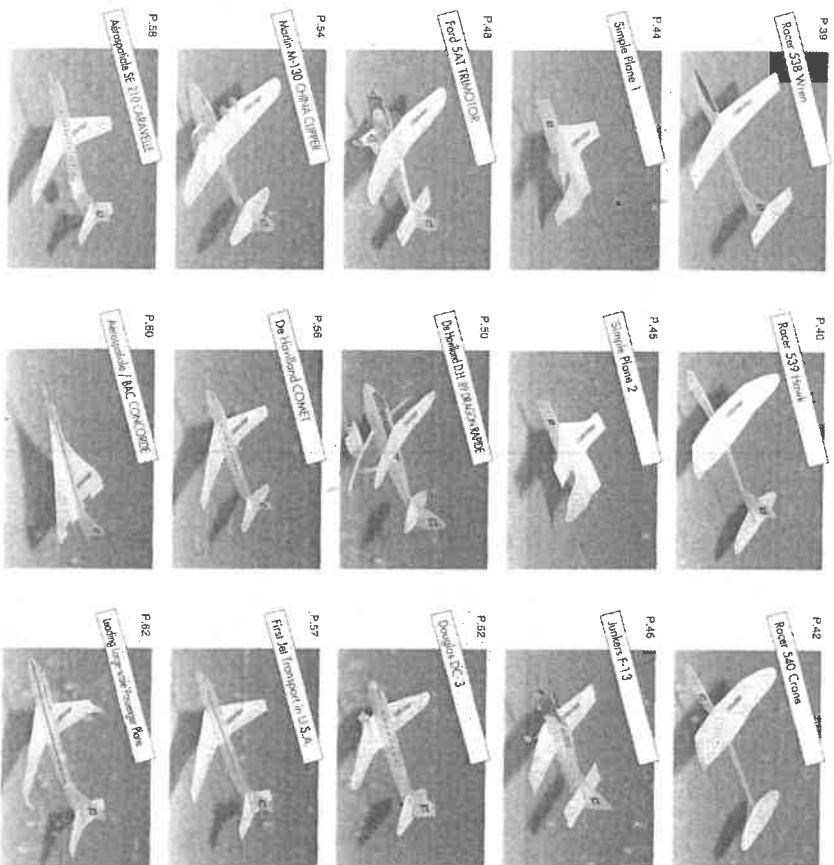

Whitewings®

ASSEMBLY INSTRUCTIONS
FLIGHT INSTRUCTIONS
GUIDELINE FOR WHITEWINGS COMPETITION
INTRODUCTION TO PAPER PLANE DESIGN
HOW TO BUILD "WHITEWINGS"

HISTORY OF PASSENGER PLANE SERIES

HOW TO BUILD "WHITEWINGS"

1. Fold all tabs outward.

2. Aligning the noses flush, glue ① through ⑧ together in the order shown.

4. Glue the horizontal stabilizer ⑪ onto the tab of the vertical stabilizer.

5. Place a ruler along the center line of main wing, bend each side up individually to make a dihedral angle of approximately 13° using the dihedral angle gauge.

6. Glue the main wing (⑨ + ⑩) firmly to the fuselage.

FINISHING TOUCHES

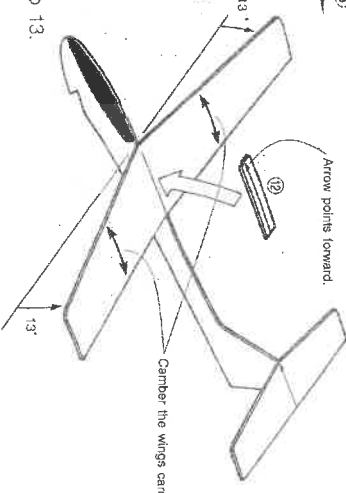
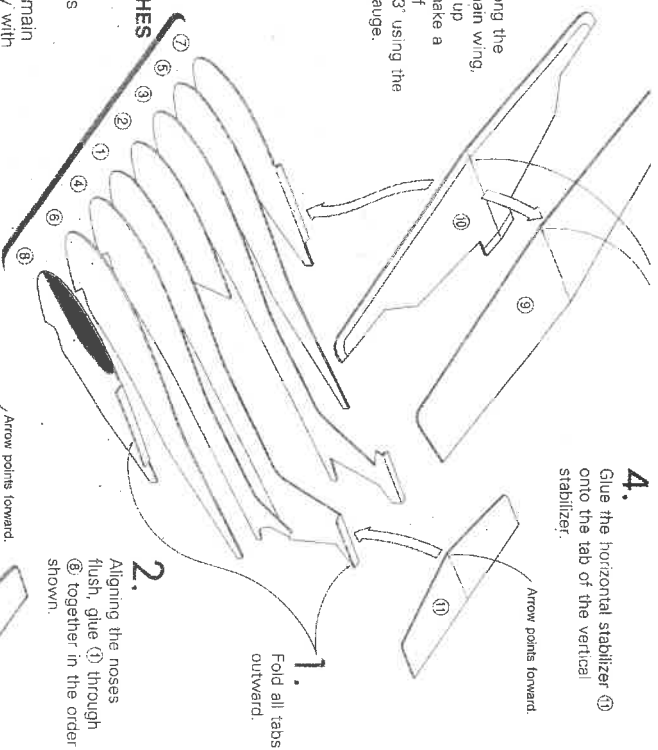
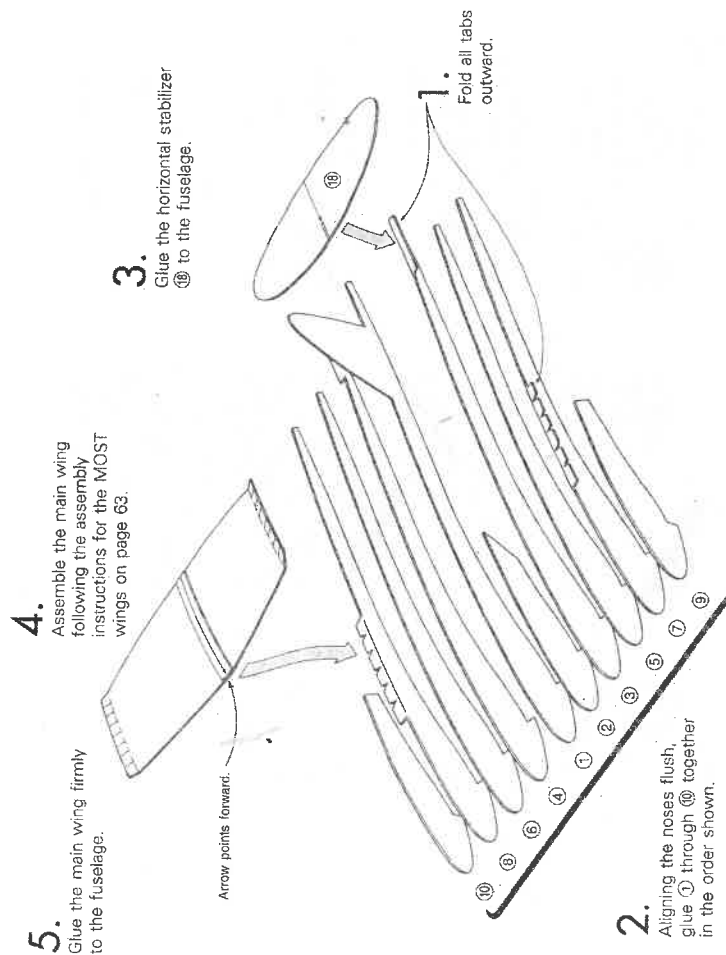
- Give the finishing touches to the plane after it dries thoroughly.

7. Camber the main wings slightly with your fingers.
8. Fold ⑫ up slightly along the center line and glue it onto the center line of the main wing.
9. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 13°.
10. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

[NOTE]

As the vertical stabilizer of the plane with T-shape horizontal stabilizer needs to be strong enough to support the horizontal stabilizer on it, this part is designed a little heavier than that of the other type of racer planes. For this reason, the fuselage might bend when the plane crash into the ground so make sure that the fuselage has no bends in it before flying it.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

5. Glue the main wing firmly to the fuselage.

4. Assemble the main wing following the assembly instructions for the MOST wings on page 63.

3. Glue the horizontal stabilizer ⑱ to the fuselage.

1. Fold all tabs outward.

2. Aligning the noses flush, glue ① through ⑩ together in the order shown.

Camber the wing tips carefully.

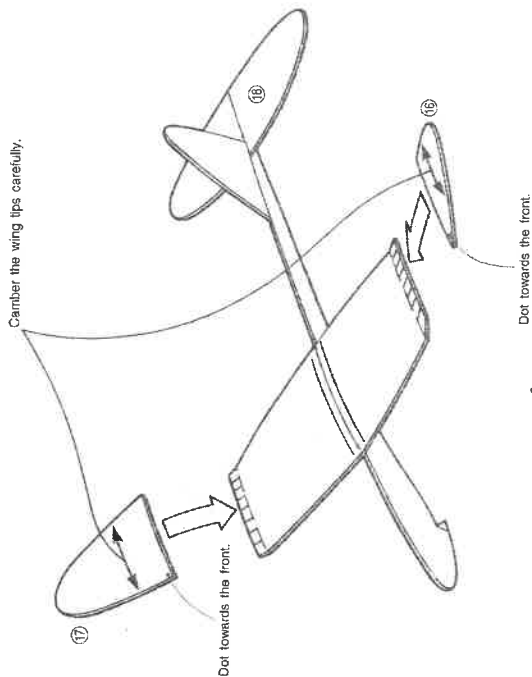
⑰

Dot towards the front.

⑱

⑯

Dot towards the front.

6. Camber both wing tips ⑯ and ⑰. Fold tabs on both ends of the main wing to form a 30° dihedral angle using the gauge and then camber them as well.

7. Apply glue to the top surface of the folded tabs of the main wing. Attach wing tips ⑯ and ⑰ respectively. Once again, check that the dihedral angle at the tip of the wing is 30°, using the gauge.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

8. Using the dihedral angle gauge make sure the dihedral angle for the main wing is 5°and for the wing tips is 30°.
9. Camber the main wings carefully with your fingers.
10. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on page 11 to 13.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

1. Fold all tabs outward.

2. Aligning the noses flush, glue ① through ⑩ together in the order shown.

3. Glue the horizontal stabilizer ⑱ to the fuselage.

4. Assemble the main wing following the assembly instructions for the MOST wings on page 63.

5. Glue the main wing firmly to the fuselage.

6. Camber both wing tips ⑯ and ⑰. Fold tabs on both ends of the main wing to form a 30° dihedral angle using the gauge and then camber them as well.

7. Apply glue to the top surface of the folded tabs of the main wing. Attach wing tips ⑯ and ⑰ respectively. Once again, check that the dihedral angle at the tip of the wing is 30°, using the gauge.

Camber the wing tips carefully.

Dot towards the front.

Dot towards the front.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

8. Using the dihedral angle gauge make sure the dihedral angle for the main wing is 5° and for the wing tips is 30°.
9. Camber the main wings carefully with your fingers.
10. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

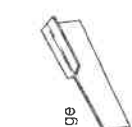
TEST FLIGHT

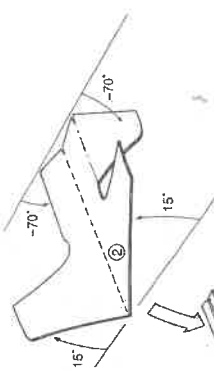
- Test fly the plane according to the Test Flight instructions for Regular Planes on page 11 to 13.

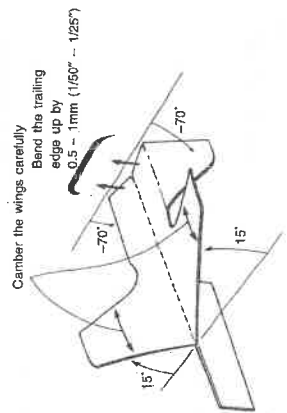
1. Fold ① outward along this line.

2. Turn up the folded smaller part of ① and fold it inward along the center line.

3. Fold both tabs on ① outside as shown.

4. Fold the protruding part over the other edge, then attach them with glue or scotch tape.

5. Completion of the fuselage

6. Placing a ruler along the center line on ② and bend each side up to make a dihedral angle of 15°. (Use the angle gauge.)

7. Bend each side of the horizontal stabilizer along the long dash and dotted line 70°downward. (Use the dihedral angle gauge.)

8. Spread glue on the tabs on ① and attach them to the underside of the front end of ②

FINISHING TOUCHES

9. Before the glue dries, fix ① and ② with your fingers carefully to ensure the center lines of both ① and ② are on the straight.
10. Camber the main wing slightly with your fingers.
11. Place the angle gauge at the upperside of the main wing and make sure that the dihedral angle for the main wing is 15°.
12. Bend the trailing edge of the horizontal stabilizer 0.5 – 1mm (1/50 – 1/25") up.
13. Placing the angle gauge at the underside of the horizontal stabilizer make sure that the dihedral angle is –70°.
14. View the plane from the front and the back and straighten any warps or bends in the fuselage and the wings.

TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on page 11 to 13.

1. Fold 1 outward along this line.

2. Turn up the folded smaller part of ① and fold it inward along the center line.

3. Fold both tabs on ① outside as shown.

4. Fold the protruding part over the another edge, then attach them with glue or scotch tape.

5. Completion of the fuselage

6. Placing a ruler along the center line ② and bend each side up to make a dihedral angle of 15°. (Use the angle gauge.)

7. Bend each side of the horizontal stabilizer along the long dash and dotted line 70°downward. (Use the dihedral angle gauge.)

8. Spread glue on the tabs on ① and attach them to the underside of the front end of

FINISHING TOUCHES

9. Before the glue dries, fix ① and ② with your fingers carefully to ensure the center lines of both ① and ② are on the straight.
10. Camber the main wing slightly with your fingers.
11. Place the angle gauge at the upperside of the main wing and make sure that the dihedral angle for the main wing is 15°.
12. Bend the tips of the horizontal stabilizer 0.5 – 1mm (1/50 – 1/25") up.
13. Placing the angle gauge at the underside of the horizontal stabilizer make sure that the dihedral angle is –70°.
14. View the plane from the front and the back and straighten, any warps or bends in the fuselage and the wings.

TEST FLIGHT

- Test fly the plane according to the test flight instructions for Regular Planes on pages 11 to 13.

features an open design for pilots to gain headwinds in their favor. The projecting horn on the plane nose is the exhaust pipe for the engine.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

1.

Cut out the slit on part ① into which the horizontal stabilizer will be inserted.

2.

Fold all tabs outward.

3.

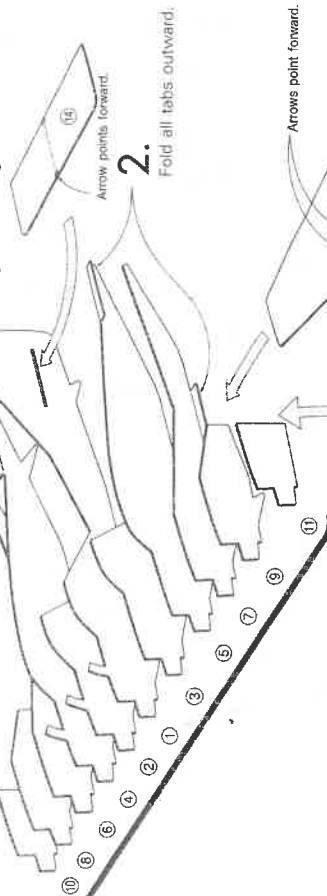
Aligning the noses flush, glue ① through ⑪ together in the order shown.

5.

Insert the horizontal stabilizer ⑭ into the slit of the vertical stabilizer. Then, apply glue on the tabs to fix the horizontal stabilizer, aligning its center line and that of the fuselage Find the center line of the horizontal stabilizer using the center guidelines.

Arrow points forward.

Arrows point forward.

9.

Using the landing gear gauge, fold landing gear parts ⑮, ⑯, and ⑰ respectively as shown in the figures. Then, glue ⑯ to the underside of ⑮ and glue ⑰ to the underside of ⑯ aligning their front edges.

10.

Aligning the front edge of the landing gear (⑮ + ⑯ + ⑰) and that of the main wing, glue the landing gear to the underside of the main wing. Make sure that the center line of the main wing and the cut of the landing gear meet each other.

11.

Glue together ⑱ and ⑲, and ⑳ and ㉑ to assemble wheels. (Make sure that each printed side can be seen.) Then, as shown in the figure, glue the wheels to the landing gear respectively, aligning the center of the tab with the center of the wheels.

Place a ruler along right and left lines on the main wing. Using a dihedral angle gauge, make a dihedral angle of 10°.

Referring to [NOTE] on page 50, draw the center line on the underside of the main wing (⑫ + ⑬).

8.

Glue the main wing (⑫ + ⑬) firmly to the fuselage aligning their center lines.

4.

Glue ⑬ to the underside of ⑫. When dry, cut off the protruding portions.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

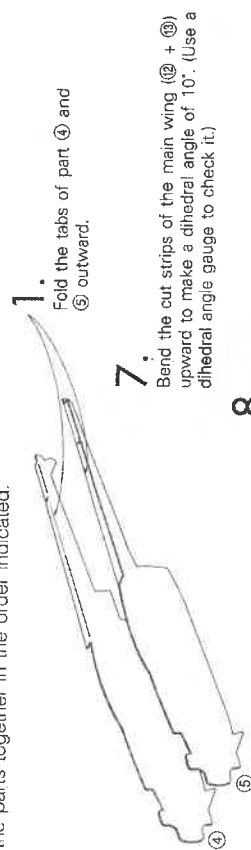
12. Camber the wing tips which have a dihedral angle carefully with your fingers.
13. Placing the dihedral angle gauge at the underside of the main wing, check the dihedral angle for 10°.
14. Placing the gear gauge at the underside of the gear, make sure that the proper degrees are set.
15. View the plane from both the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

by professor Junkers. The 5AT, a larger plane with an engine utilizing more horse power, made its maiden voyage in 1928. More than 100 of the planes were produced and these Ford 5AT TRIMOTOR aircraft are still being used today in charter sightseeing service in the USA.

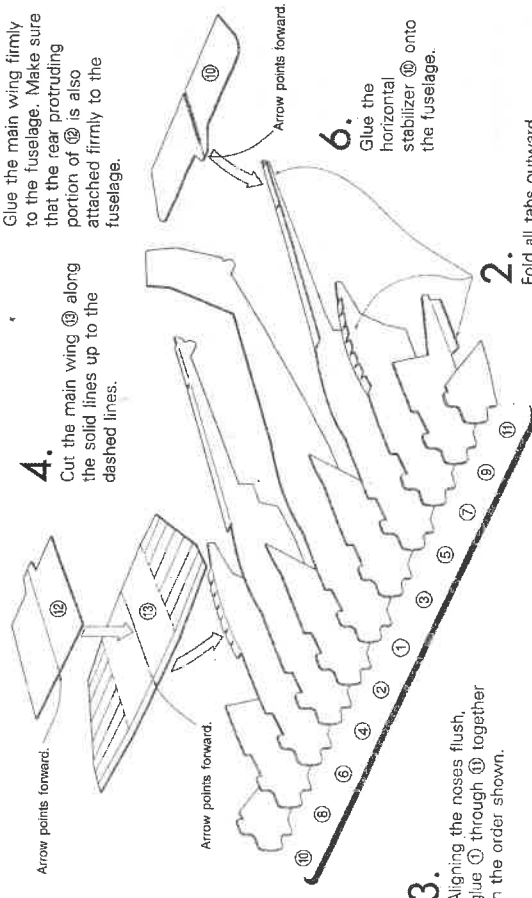
GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

1. Fold the tabs of part ④ and ⑤ outward.

7. Bend the cut strips of the main wing (⑫ + ⑬) upward to make a dihedral angle of 10°. (Use a dihedral angle gauge to check it.)

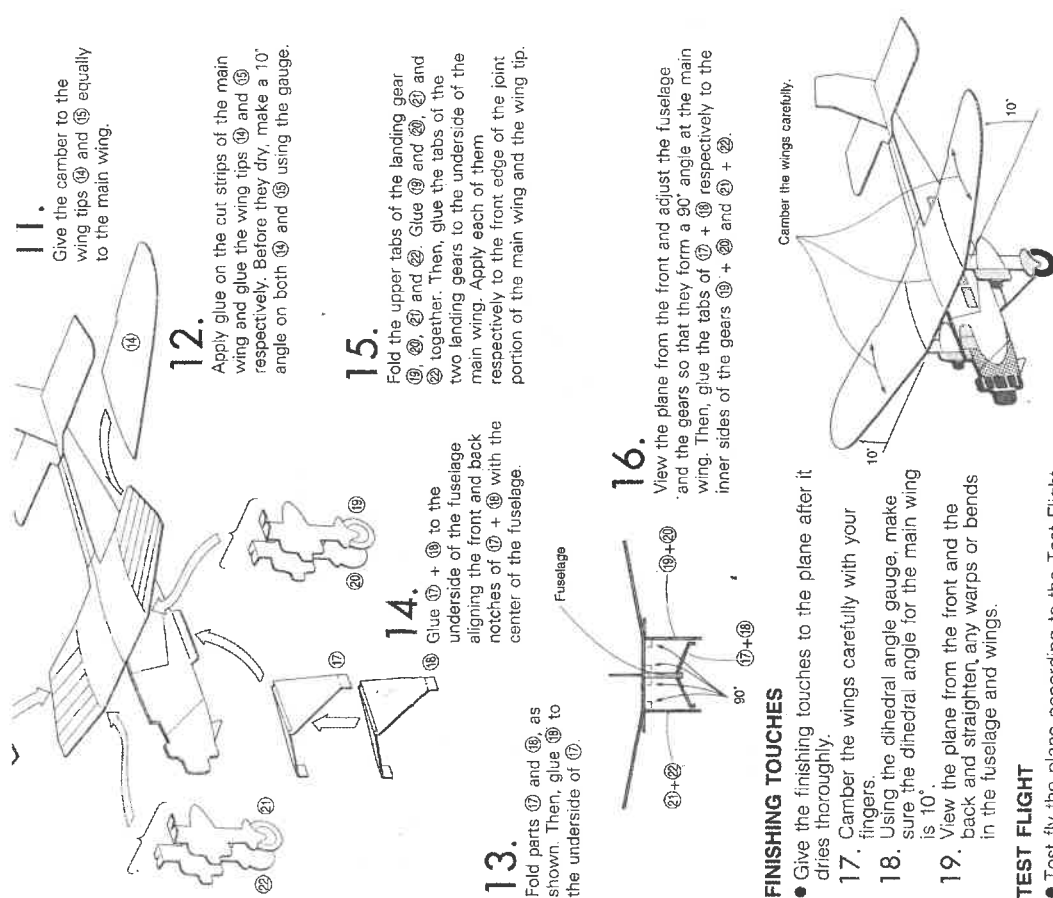
8. Camber the main wing (⑫ + ⑬) after the curve of its gluing position on the fuselage.

5. Glue ⑫ to the upperside of ⑬ aligning their center lines. When dry, cut off the protruding portion of ⑬

4. Cut the main wing ⑬ along the solid lines up to the dashed lines.

9. Glue the main wing firmly to the fuselage. Make sure that the rear protruding portion of ⑫ is also attached firmly to the fuselage.

6. Glue the horizontal stabilizer ⑩ onto the fuselage.

3. Aligning the noses flush, glue ① through ⑪ together in the order shown.

2. Fold all tabs outward.

11. Give the camber to the wing tips ⑭ and ⑮ equally to the main wing.

12. Apply glue on the cut strips of the main wing and glue the wing tips ⑭ and ⑮ respectively. Before they dry, make a 10° angle on both ⑭ and ⑮ using the gauge.

13. Fold parts ⑰ and ⑱, as shown. Then, glue ⑲ to the underside of ⑰.

14. Glue ⑰ + ⑱ to the underside of the fuselage aligning the front and back notches of ⑰ + ⑱ with the center of the fuselage.

15. Fold the upper tabs of the landing gear ⑲, ⑳, ㉑ and ㉒. Glue ⑲ and ⑳, ㉑ and ㉒ together. Then, glue the tabs of the two landing gears to the underside of the main wing. Apply each of them respectively to the front edge of the joint portion of the main wing and the wing tip.

16. View the plane from the front and adjust the fuselage and the gears so that they form a 90° angle at the main wing. Then, glue the tabs of ⑰ + ⑱ respectively to the inner sides of the gears ⑲ + ⑳ and ㉑ + ㉒.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

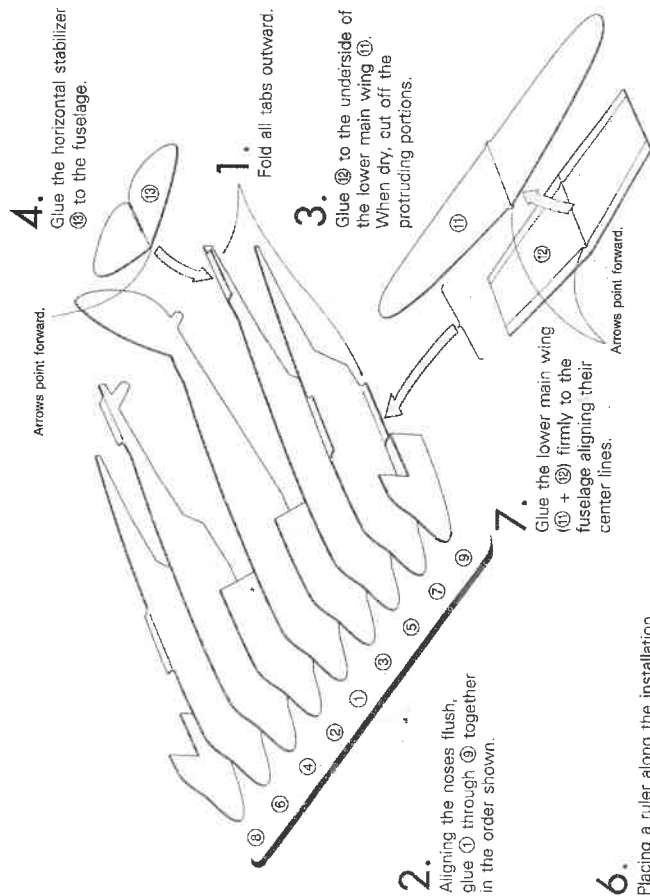
17. Camber the wings carefully with your fingers.
18. Using the dihedral angle gauge, make sure the dihedral angle for the main wing is 10°.
19. View the plane from the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

Glue the parts together in the order indicated.

Arrows point forward.

4.
Glue the horizontal stabilizer ⑬ to the fuselage.

1.
Fold all tabs outward.

3.
Glue ⑫ to the underside of the lower main wing ⑪. When dry, cut off the protruding portions.

⑧ ⑥ ④ ② ① ③ ⑤ ⑦ ⑨

2.
Aligning the noses flush, glue ① through ⑨ together in the order shown.

7.
Glue the lower main wing (⑪ + ⑫) firmly to the fuselage aligning their center lines.

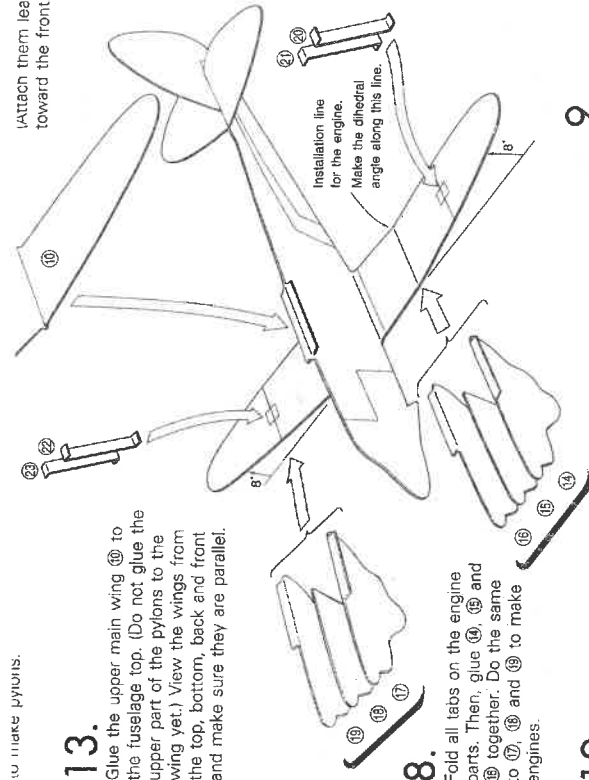
Arrows point forward.

6.
Placing a ruler along the installation lines on the main wing, make a dihedral angle of 8° for both sides of the main wing. (Use the dihedral angle gauge.)

5.
Draw a center line on the underside of the lower main wing (⑪ + ⑫). (Refer to [NOTE])

[NOTE]
Make pinholes at both ends of the main wing. Turn the main wing over. Link the pinholes together with a ruler and draw a cener line on the unprinted side of the main wing.

to make pylons.

(Attach them leaning slightly toward the front.)

13.
Glue the upper main wing ⑩ to the fuselage top. (Do not glue the upper part of the pylons to the wing yet.) View the wings from the top, bottom, back and front and make sure they are parallel.

㉓ ㉒ ⑩ ㉑ ⑳ 8° 8°

Installation line for the engine.
Make the dihedral angle along this line.

⑲ ⑱ ⑰

8.
Fold all tabs on the engine parts. Then, glue ⑭, ⑮ and ⑯ together. Do the same to ⑰, ⑱ and ⑲ to make engines.

⑯ ⑮ ⑭

9.
Attach those engines to the underside of the lower main wing aligning with the installation lines.

12.
Placing a ruler along the center line of the upper main wing ⑩, make a dihedral angle.

FINISHING TOUCHES
- Give the finishing touches to the plane after it dries thoroughly.

15. Camber both the upper and the lower main wings slightly with your fingers.
16. Using the dihedral angle gauge, make sure the dihedral angle for the lower main wing is 8°.
17. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

TEST FLIGHT
- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

14.
View the plane from the front to check that the fuselage and the pylons are parallel. Then, glue the top part of the pylons to the underside of the upper main wing.

high quality and economical efficiency. An unprecedented production of more than 10,000 planes were made for civilian and military transport use.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

1. Fold all tabs outward.

2. Aligning the noses flush, glue ① through ⑨ together in the order shown.

3. Cut the main wing ⑪ along the solid lines up to the dashed lines.

4. Glue ⑩ to the upperside of ⑪ aligning their center lines. When dry, cut off the protruding portions of ⑪.

5. Referring to [NOTE] on page 50, draw the center line on the underside of the main wing (⑩ + ⑪).

6. Bend the cut strips of the main wing (⑩ + ⑪) upward to make a dihedral angle of 10°. (Use the dihedral angle gauge to check it.)

7. Camber the main wing (⑩ + ⑪) after the curve of its gluing position under the fuselage.

8. Glue the main wing firmly to the fuselage aligning their center lines.

9. Examining carefully the curve of the gluing position for the main wing under the fuselage, adjust the camber of the main wing evenly from the root to both edges. Check that the dihedral angle of the cut strips of the main wing is 10°.

10. Camber the wing tips ⑫ and ⑬ equally to the main wing. Refer to Figure 1 on page 10. It is very important to camber the entire main wing evenly from the root to both edges so that it generates the equal angle of setting from the wing root to both edges. (The dashed line in the figure 1 on page 10 shows an inappropriate camber which creates different angles of settings between the wing root and both edges.)

11. Apply glue on the cut strips of the main wing and glue the wing tips ⑫ and ⑬ respectively. Before they dry, make a 10° angle on both ⑫ and ⑬ using the gauge. Additionally, adjust the angle of setting evenly from the wing root to both edges. (Refer to Figure 1 on page 10.)

12. Fold all tabs of engine parts ⑮ through ㉒.

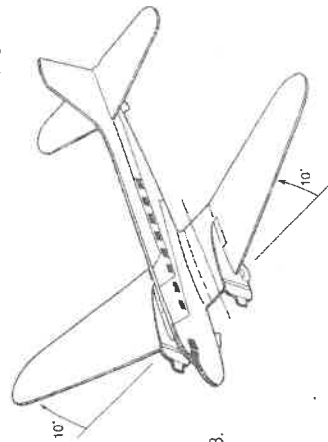
14. Slide the assembled engine onto the main wing. Put the left and right engines respectively onto the front notches of the joint portion of the main wing and the wing tips. Then, attach both engines to the main wing with glue.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

15. Camber the main wing carefully with your fingers. As this plane has a sweptback wing, the angle of setting tends to be upward at the wing edges. However, it is wrong. (Refer to Figure 1 on page 10.) Adjust the camber to place an equal angle of setting from the wing root to wing edges.
16. Using the dihedral angle gauge, check that the dihedral angle of the wings tips is 10°.
17. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wing.

TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13. When test flying your plane, observe its flight carefully. In the case that the plane tends to circle slightly, remember if it turns to the right or to the left. When you want this plane to fly high, launch the plane tilting it to the direction the plane circled so that it climbs up higher for an excellent flight.

and "PHILLIPINE CLIPPER" began scheduled service across the Pacific Ocean in 1936. This transpacific service proved that a large flying boat with multi-engines were well suited in those days to the routes crossing the Pacific Ocean.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated

1. Fold all tabs outward.

2. Aligning the noses flush, glue ① through ⑪ together in the order shown.

3. Assemble the sponson.

3-1 Fold ⑱ outward along the center line and fold all tabs outward. As a result, the printed side and all the tabs will be facing outward.

3-2. Swell the inside of the two folds of ⑱. Then spread glue on the shaded portion as shown in the figure and glue the part together to complete its bag shape.

3-3. Insert a pencil into the sponson and swell it again to make it into a streamline shape. 8mm approx. (1/3")

3-4. Assemble part ⑲ in the same manner.

4. Glue the sponson ⑱ to the printed box on the left side of the fuselage. Glue the sponson ⑲ to the printed box on the right side of the fuselage.

5. View the fuselage from the front. Before the glue dries thoroughly, fix the sponsons ⑱ and ⑲ to ensure that they are glued horizontally.

Fuselage

6. Cut part ⑭ along the solid lines up to the dashed lines.

7. Glue ⑬ to the upperside of ⑭. When dry, cut off the protruding portions.

Arrows point forward.

8. Glue the horizontal stabilizer ⑰ to the fuselage.

Arrow points forward.

9. Placing a ruler along the dashed line on both edges of the main wing (⑬ + ⑭), bend the strips upward to make a dihedral angle of 10°

10. Camber the main wing (⑬ + ⑭) after the curve of its gluing position on the fuselage.

11. Glue the main wing firmly to the fuselage.

Camber the wing tips carefully.

Dot towards the front.

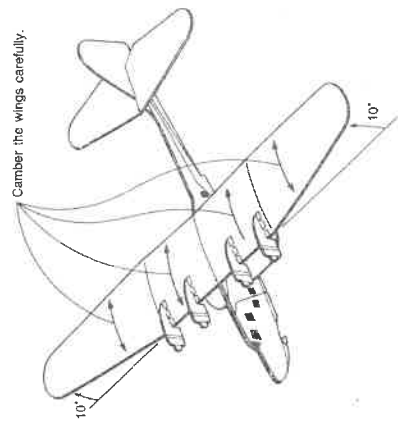
12. According to the curve of the gluing position for the main wing on the fuselage, camber the main wing (⑬ + ⑭) evenly up to both edges. Make sure that the dihedral angle for the folded tabs are 10°.

13. Camber both wing tips ⑮ and ⑯ equally to the main wing.

14. Apply glue to the top surface of the folded tabs of the main wing and attach wing tips ⑮ and ⑯ respectively. Before it dries, adjust the dihedral angles of ⑮ and ⑯ to 10°. (Use the dihedral angle gauge.)

17. Using the engine installation lines and cuts on the main wing as a guide, glue the four engines to the main wing.

Dot towards the front.

Camber the wing tips carefully.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

18. Adjust the camber of both the main wing and the wing tips carefully with your fingers.
19. Using the dihedral angle gauge, check again that the dihedral angle of the main wing is 10°.
20. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wings.

TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

However, accidents occurred two years later when planes experienced in-flight disintegration twice. After a large-scaled investigation, it was revealed that the accidents were caused by a fatigue fracture of the pressurized cabin. COMET 4 was produced with a built-in countermeasure to prevent fatigue fracture of the pressurized cabin. This led to the improved design, stronger construction and the testing practice for all transport planes with pressurized cabins.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

1. Fold all tabs outward.

2. Aligning the noses flush, glue ① through ⑦ together in the order shown.

3. Glue ⑨ to the underside of ⑧. When dry cut off the protruding portions.

4. Using the dihedral angle gauge, make a dihedral angle of approximately 7°on the horizontal stabilizer ⑩ and attach it to the fuselage.

5. Draw the center line on the underside of the main wing (⑧ + ⑨). (Refer to [NOTE] on page 50.)

6. Placing a ruler along the center line of the main wing (⑧ + ⑨) make a dihedral angle of approximately 10°.

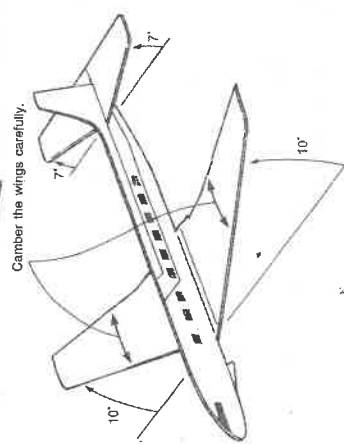
7. Glue the main wing (⑧ + ⑨) firmly to the fuselage aligning their center lines.

Arrows point forward.

Camber the wings carefully.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

8. Camber the main wing slightly with your fingers.
9. Place the dihedral angle gauge at the underside of the main wing and make sure the dihedral angle for the main wing is 10°.
10. Place the dihedral angle gauge at the upperside of the horizontal stabilizer , then make sure the dihedral angle for the horizontal stabilizer is 7°.
11. View the plane from the front and the back and straighten any warps or bends in the fuselage and the wings.

TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Regular Planes on page 11 to 13.

the main wing and suppress of wing flutter. Based on this technology, Boeing developed the jet tanker KC-135 and furthermore put the first passenger jet, the Boeing 707, in practical use in the U.S.A. (First flight in 1954) This passenger jet, compared to planes with reciprocating engines, resulted in flights at twice the speed and payload capacity. That is, almost four times in transport effectiveness.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

1. Fold all tabs outward.

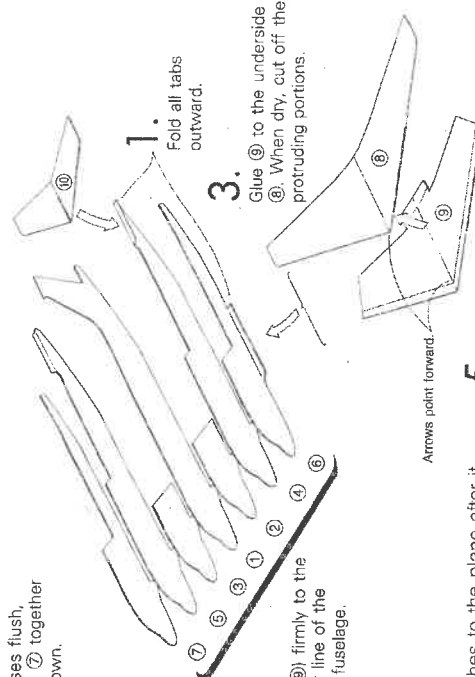
2. Aligning the noses flush, glue ① through ⑦ together in the order shown.

3. Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.

4. Using the dihedral angle gauge, make a dihedral angle of 7°on the stabilizer ⑩. Then glue it to the fuselage.

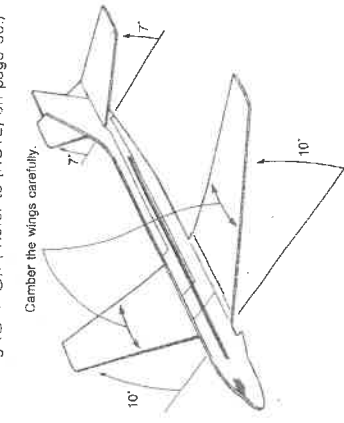
5. Draw the center line on the underside of the main wing (⑧ + ⑨). (Refer to [NOTE] on page 50.)

6. Placing a ruler along the center line of the main wing (⑧ + ⑨), make a dihedral angle of approximately 10°.

7. Glue the main wing (⑧ + ⑨) firmly to the fuselage aligning the center line of the main wing with that of the fuselage.

Arrows point forward.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

8. Camber the main wings slightly with your fingers.
9. Place the dihedral angle gauge at the underside of the main wing and make sure the dihedral angle for the main wing is 10°.
10. Placing the dihedral angle gauge at the upperside of the horizontal stabilizer make sure the dihedral angle for the horizontal stabilizer is 7°.
11. View the plane from the front and the back and straighten any warps or bends in the fuselage and the wings.

TEST FLIGHT

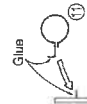
- Test fly the plane according to the Test Flight instructions for Regular Planes on pages 11 to 13.

coming from the CARAVELLE or the engine pod with pylons on the front edges of the main wing that were used in Boeing B-47 and 707.

GLUING INSTRUCTIONS

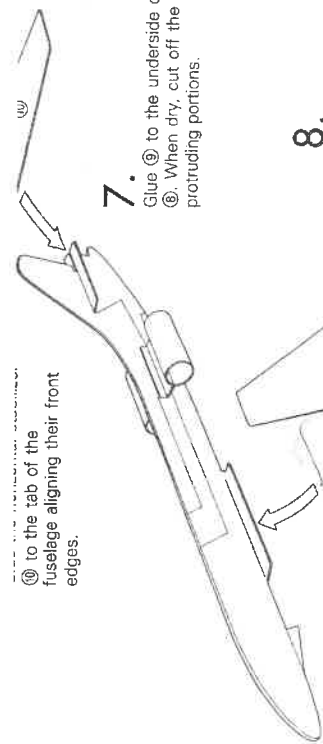
Glue the parts together in the order indicated.

1. Fold all tabs outward.

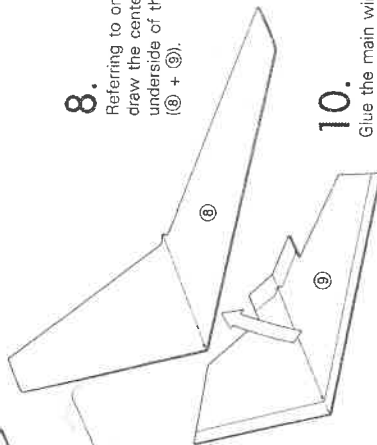
2. Aligning the noses flush, glue ① through ⑦ together in the order shown.

3. Fold the dashed lines of ⑪ inside. Then, make the center portion into a round shape and glue the tabs together shown in the figure to make a cylindrical engine.

4. Glue the engine ⑪ to the left tab on the fuselage.

5. In the same manner mentioned in Instructions 3 and 4, glue the engine ⑫ to the right tab on the fuselage.

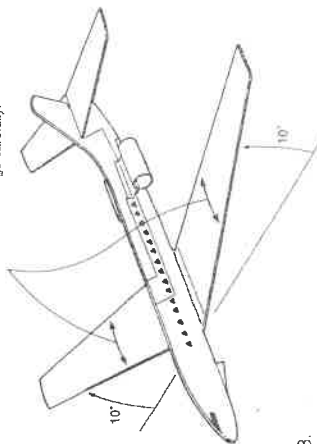
⑩ to the tab of the fuselage aligning their front edges.

7. Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.

8. Referring to on page 50, draw the center line on the underside of the main wing (⑧ + ⑨).

9. Place a ruler along the center line of the main wing and bend each side up individually to make a dihedral angle of 10°

10. Glue the main wing firmly to the fuselage aligning their center lines.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

11. Camber the main wing slightly with your fingers.
12. Placing the dihedral angle gauge on the underside of the main wing, make sure the dihedral angle for the main wing is 10°.
13. View the plane from the front and the back and straighten any warps or bends in the fuselage and wings.

TEST FLIGHT

- Test fly the plane according to Test Flight instructions for Regular Planes on pages 11 to 13.

produced. The CONCORDE service by British Airway and Air France have continued without accident, and carrying as many as 144 passengers.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

1. Fold all tabs outward.

2. Aligning the noses flush, glue ① through ⑥ together in the order shown.

5. Make pinholes at 4 dots on the printed side of the wing ⑦ so that the pinholes are visible from the unprinted side.

4. Cut out a slit on the wing ⑦. (Use a cutter.)

3. Draw the center line on the unprinted side of the wing ⑦. (Refer to on page 50.)

6. Place a ruler along the center line of the wing ⑦ and make a dihedral angle of 7° using the dihedral angle gauge.

7. Spread **glue** on the tabs on the fuselage. Then, glue the wing ⑦ to the underside of the fuselage in inserting the hook for the catapult into the slit. Make sure to align the center line of the wing with that of the fuselage.

Underside of the plane

9. Turn the plane upside-down. Then, glue the left engine ⑧ to the wing aligning the front edge with the pin holes and the rear edge of ⑧ with the protruding portion.

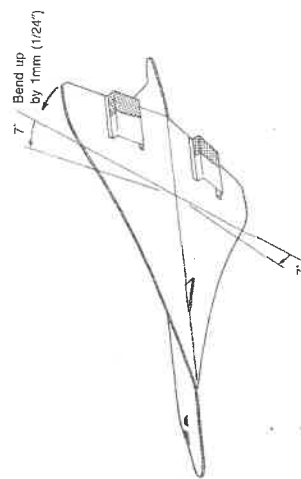
10. Fold the right engine ⑨ just like ⑧ and glue it to the wing in the same manner as ⑧.

FINISHING TOUCHES

- Give the finishing touches to the plane after it dries thoroughly.

11. Place the dihedral angle gauge at the underside of the wing and make sure the dihedral angle of the wing is 7°.
12. **Bend both trailing edges of the wing up by approximately 1mm (1/24"). Do not forget this or the plane won't fly.**
13. View the plane from both the front and the back and straighten any warps or bends in the fuselage and the wing.

TEST FLIGHT

- Test fly the plane according to the Test Flight instructions for Delta Wing Planes on page 13.

latest model 747-400, some improvements were made. The most conspicuous change in appearance is the winglet at the edge of the wing that extends flight range. Instead of mechanical indicators, in addition, the improvement of computors and CRT was introduced in the cockpit to operate the plane more economically with 2 pilots.

GLUING INSTRUCTIONS

Glue the parts together in the order indicated.

1. Fold all tabs outward.

2. Aligning the noses flush, glue ① through ⑦ together in the order shown.

3. Glue ⑨ to the underside of ⑧. When dry, cut off the protruding portions.

4. Place a ruler along the center line of the horizontal stabilizer ⑩ and make a dihedral angle of 7°. Then, glue it firmly to the fuselage.

5. Referring to on page 50, draw a center line on the unprinted side of the main wing (⑧ + ⑨).

Arrows point forward.

6. Place a ruler along the center line of the main wing (⑧ + ⑨), and make a dihedral angle of 10°using the dihedral angle gauge. Additionally, fold both edges of the main wing (winglets) upward and raise them to 65°. Use the gauge to check that it is 65°.

7. Glue the main wing to the fuselage aligning their center lines.

Camber the main wing carefully.

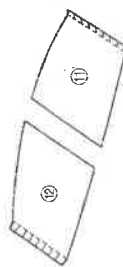
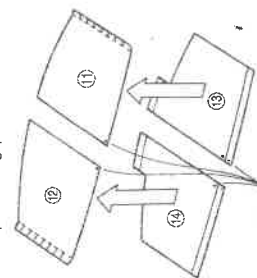
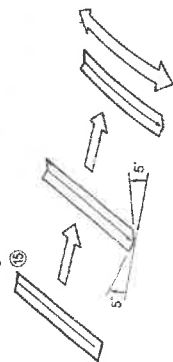
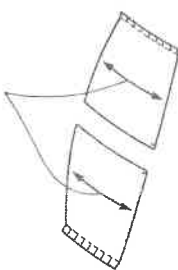
FINISHING TOUCHES

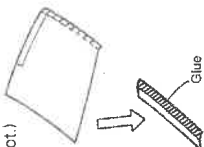
- Give the finishing touches to the plane after it dries thoroughly.
  8. Camber the main wing slightly with your fingers.
  9. Placing the dihedral angle gauge at the underside of the main wing, make sure the dihedral angle of the main wing is 10°.
  10. Place the gauge at the edges of the main wing and check that the dihedral angle of the winglets are 65° against the main wing.
  11. Placing the dihedral angle gauge at the upperside of the horizontal stabilizer, make sure that the dihedral angle is 7°
  12. View the plane from the front and the back and straighten any warps or bends in the fuselage and wings.

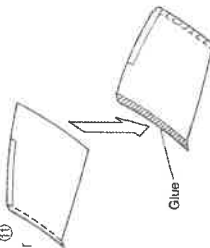
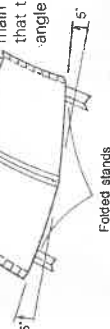
TEST FLIGHT

- Test fly the plane according to the Test Flight instruction for Regular Planes on pages 11 to 13.

wing. Because the shape of the central part of the wing resembles a so-called saddle shaped surface in math, I call this type of wing a MOST (Modified Saddle Type) wing. It is constructed as follows.

1. Cut parts ⑪ and ⑫ along the solid lines up to the dashed lines. Then placing a ruler along the dashed line, bend the resulting strips slightly upward.

2. Glue parts ⑬ and ⑭ to the underside of parts ⑪ and ⑫ respectively. When dry, cut off the protruding portions.

3. Using a ruler along the center line, fold part ⑮ from the center line to make 5°angle on both sides. Then curve it carefully with your fingers to fit the curved fuselage top where the main wings are to be attached.

the same manner as ⑮. This curve is called camber.

5. Apply glue on half of the underside of ⑮ and glue onto ⑫ + ⑭. (The arrow should point toward the dot.)

Glue

6. In the same manner as in 4–5, attach ⑪ + ⑬ to the other side of ⑮.

Glue

7. Placing the dihedral angle gauge on the main wing check that the dihedral angle is 5°

Folded stands

8. Putting folded stands under the main wing will be conducive to fast and thorough drying.

5
4
1
7
2
3
6

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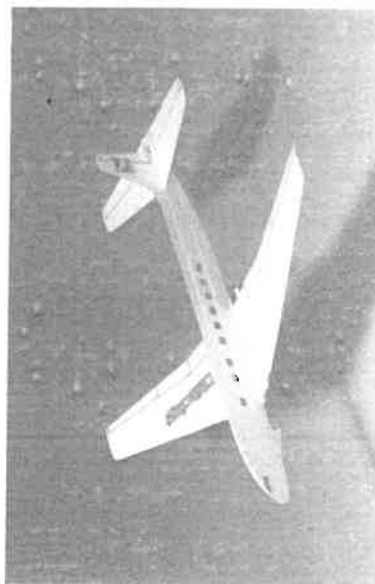
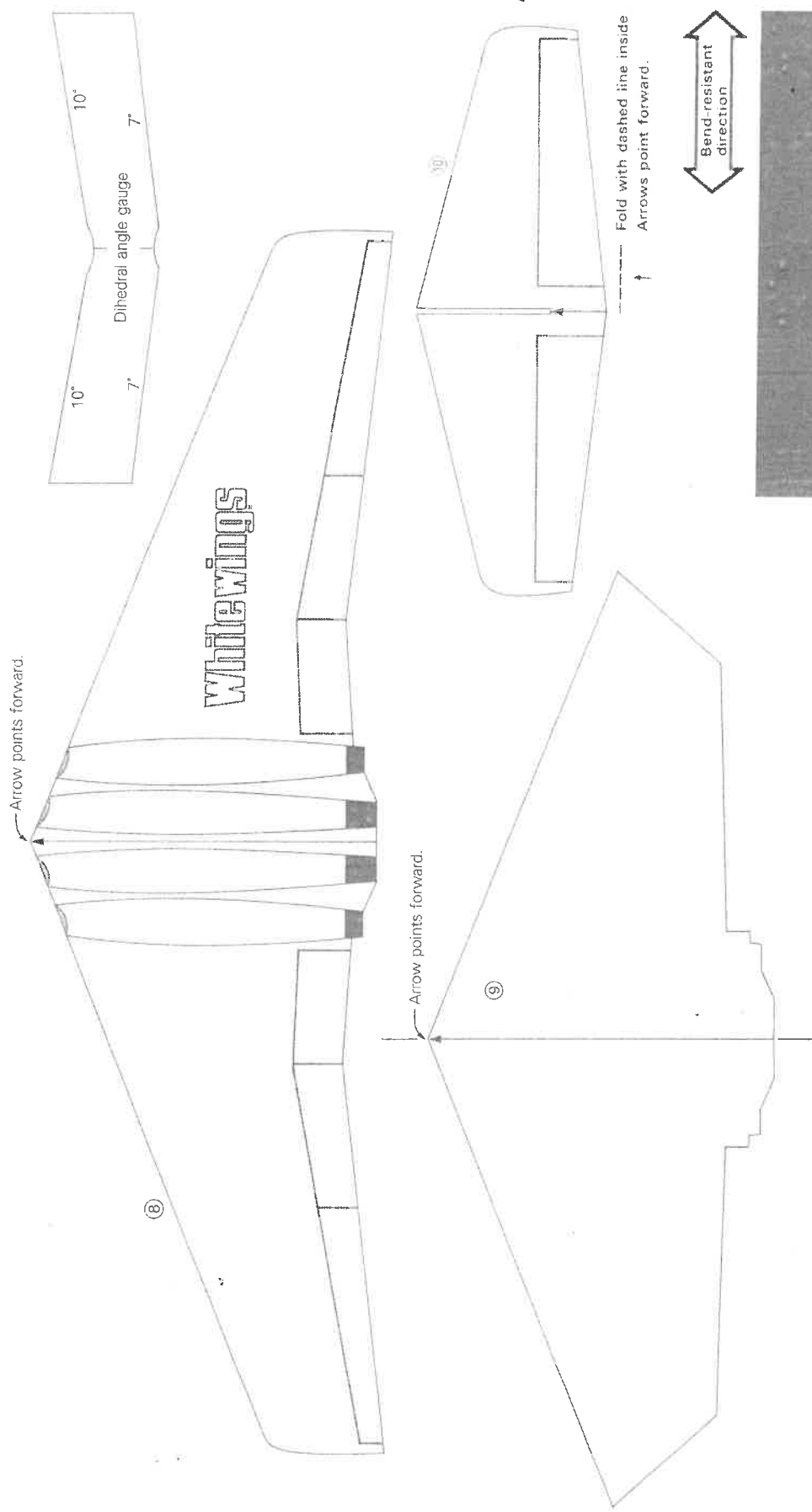
Martin M-130 CHINA CLIPPER

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③
④
⑤
⑥
②
①

⑤
⑥
④
⑦
③
②
①

⑥
Cut along the solid line
up to the dashed line.
④
⑦
Cut along the solid line
up to the dashed line.
⑤
①
②
10°
10°
Dihedral angle gauge
③

④
⑤
White wings
①
⑦
Arrow points forward.
⑥
⑭
③
②
⑨
⑧

Dot towards the front.
12
Arrow points forward.
Dot towards the front.
14
15
Whitewings
Arrow points forward.
13
Cut along the solid lines up to the dashed line.
Cut along the solid lines up to the dashed line.
Dihedral angle gauge.
10°
Fold with dashed line inside
Arrows point forward
Bend-resistant direction
Arrow points forward.
16
Fold with this line outward.
Arrow points forward.
Fold with this line outward.
18
Fold with these lines outward.
Fold with this line outward.
Arrow points forward.
Fold with this line outward.
17
Fold with these lines outward.
19
20
21
22
Whitewings Ford 5AT TRIMOTOR

10°
Dihedral angle gauge
④
⑦
⑥
⑤
⑩
⑧
①
Whitewings
Cut off the slit
②
③
⑨
⑪

③
④
⑦
⑧
⑱
②
White Wings
①
⑥
⑤

Arrow points forward.
⑮
⑬
Dots toward the front.
⑭
Dot towards the front.
⑰
Dot towards the front.
⑯
⑪
Dots toward the front.
⑫
Whitewings
Cut along the solid
lines up to the dashed line.
Cut along the solid
lines up to the dashed line.
⑩
⑨
Fold with dashed line inside.
Arrows point forward.
Bend-resistant direction
Dihedral angle gauge
30°
30°
5°
5°
Whitewings®
Racer 540 Crane

③
④
⑦
⑧
①
Arrow points forward.
⑱
②
⑥
⑤

Whitewings
②
Whitewings
②
For the horizontal stabilizer
For the main wing
15°
-70°
15°
-70°
15°
15°

White wings
White wings
②
②
For the horizontal stabilizer
For the main wing
15°
15°
15°
15°
-70°
-70°

15°
15°
For the horizontal stabilizer
-70°
-70°
15°
For the main wing
15°
Whitewings
②
Whitewings
②

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HISTORY OF FLIGHT

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